

Serial No. 10/706,292

Docket No. K-0547

Amdt. dated October 2, 2006

Reply to Office Action of July 3, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A power control system for a liquid crystal display (LCD) monitor having an LCD panel, the power control system comprising:
 - a light source unit for providing light to the LCD panel;
 - a power supply unit for generating a ~~standard~~ low direct current (DC) voltage;
 - a high-voltage generator ~~coupled to the power supply unit for converting for~~ outputting to the light source unit a high voltage based on the low DC voltage to a relatively high voltage, the high-voltage generator supplying the high voltage to the light source unit; and
 - a feedback control unit ~~coupled to the power supply unit for interrupting the operation of the power supply unit when the converted high voltage is determined to be abnormal~~ for detecting a voltage induced from the high voltage output, for determining based on a level of the induced voltage an abnormal condition of the high voltage output, and for inhibiting the output of the high-voltage generator during a time corresponding to the abnormal condition,

wherein said feedback control unit comprises a patterned conductor for conducting the induced voltage to said feedback control unit.

2. (Currently Amended) The power control system of claim 1, wherein ~~the feedback control unit determines whether the converted high voltage is abnormal or not by analyzing a voltage induced due to the high voltage generated by the high voltage generator~~the abnormal condition is determined when the level of the induced voltage indicates a power surge in the high voltage output.

3. (Canceled)

4. (Currently Amended) The power control system of claim ~~3~~1, wherein the ~~eable patterned conductor~~ is a printed current board (PCB) pattern disposed electromagnetically proximate to an electric output of the high-voltage generator and to an electric input of the light source unit.

5. (Currently Amended) The power control system of claim ~~[4]~~1, wherein ~~the feedback control unit further comprises~~comprising:

a power supply control circuit ~~coupled to the PCB pattern and the power supply unit, the control circuit interrupting for receiving the induced voltage and for suspending the operation of the power supply unit when the converted high voltage is determined to be~~

~~abnormal by analyzing the induced voltage during the time corresponding to the abnormal~~
condition.

6. (Currently Amended) The power control system of claim 51, wherein the ~~converted high voltage abnormal condition~~ is determined ~~to be abnormal~~ when ~~there is no~~ detection of induced voltage ~~is suddenly increased or decreased or when there is no voltage~~ induced through the PCB pattern at all from the high voltage output.

7. (Currently Amended) The power control system of claim 51, wherein the ~~converted high voltage abnormal condition~~ is determined ~~to be abnormal~~ when the level of the induced voltage indicates that the high voltage is less than a predetermined voltage level.

8. (Original) The power control system of claim 5, wherein the power supply control circuit is integrated within the power supply unit.

9. (Original) The power control system of claim 8, wherein the power supply control circuit is a switching mode power supply (SMPS) control circuit.

10. (Currently Amended) The power control system of claim 51, ~~wherein~~ the feedback

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control unit further ~~comprises~~comprising:

a ~~first coupling~~ capacitor ~~coupled to the PCB pattern~~ for performing alternating current (AC) coupling ~~on~~ the induced voltage conducted by the patterned conductor;

an integration circuit ~~coupled to the first capacitor~~ for ~~converting~~integrating the AC-coupled voltage, to ~~output~~an integrated DC voltage ~~by integration~~; and

a ~~first rectifying~~ diode ~~coupled to the integration circuit and the power supply control circuit~~ for outputting the integrated DC ~~voltage, voltage to the power supply unit~~ the integrated DC voltage being used to determine the abnormal condition.

11. (Currently Amended) The power control system of claim 10, wherein the integration circuit comprises a series resistor and a ~~second~~shunt capacitor.

12. (Currently Amended) The power control system of claim ~~10~~5, the feedback control unit further comprising:

a ~~zener~~Zener diode ~~coupled to the first diode~~ for cutting off the DC voltage being outputted through the first diode when it is higher than a breakdown voltage of the zener diode limiting the induced voltage received by the power supply control circuit.

13. (Original) The power control system of claim 1, wherein the light source unit is a

fluorescent lamp.

14. (Currently Amended) The power control system of claim 13, wherein the fluorescent lamp is a cold cathode fluorescent lamp ~~(CCFL)~~ (CCFL).

15. (Currently Amended) A power control system for a liquid crystal display (LCD) monitor having a LCD panel, the power control system comprising:

a light source unit for providing light to the LCD panel;

a power supply unit for generating a standard ~~low~~ DC voltage;

a direct current to direct current (DC/DC) converter ~~coupled to the power supply unit~~ for converting the standard DC voltage to a predetermined DC voltage;

a high-voltage generator ~~coupled to the DC/DC converter for converting for outputting to the light source unit a high voltage based on the predetermined DC voltage to a relatively high voltage, the high-voltage generator supplying the high voltage to the light source unit; and~~

a feedback control unit ~~coupled to the power supply unit for interrupting the operation of the power supply unit when the converted high voltage is determined to be abnormal for detecting a voltage induced from the high voltage output, for determining based on a level of the induced voltage an abnormal condition of the high voltage output, and for~~

inhibiting the output of the high voltage generator during a time corresponding to the abnormal condition,

wherein said feedback control unit comprises a printed current board (PCB) pattern disposed electromagnetically proximate to an electrical output of the high-voltage generator and to an electrical input of the light source unit, for conducting the induced voltage to said feedback control unit.

16. (Currently Amended) The power control system of claim 15, ~~wherein~~ the feedback control unit ~~comprises~~further comprising:

~~a printed current board (PCB) pattern, through which a voltage is induced due to the high voltage generated by the high voltage generator; and~~

~~a power supply control circuit coupled to the PCB pattern and the power supply unit, wherein the control circuit interrupts~~for receiving the induced voltage and for suspending the operation of the power supply unit when the converted high voltage is determined to be abnormal by analyzing the induced voltage during the time corresponding to the abnormal condition.

17. (Original) The power control system of claim 16, wherein the power supply control circuit is integrated within the power supply unit.

18. (Original) The power control system of claim 17, wherein the power supply control circuit is a switching mode power supply (SMPS) control circuit.

19. (Currently Amended) The power control system of claim 16, ~~wherein the feedback control unit further comprises~~comprising:

a ~~first~~coupling capacitor ~~coupled to the PCP pattern for performing~~ alternating current (AC) coupling ~~on~~ the induced voltage conducted by the PCB pattern;

an integration circuit ~~coupled to the first capacitor for converting~~integrating the AC-coupled voltage, to ~~output a~~an integrated DC voltage ~~by integration~~; and

a ~~first~~rectifying diode ~~coupled to the integration circuit and the power supply control circuit~~ for outputting the integrated DC voltage to the power supply ~~unit~~control circuit,

wherein the power supply control circuit uses the integrated DC voltage to determine the abnormal condition.

20. (Currently Amended) The power control system of claim 19, wherein the integration circuit comprises a series resistor and a ~~second~~shunt capacitor.

21. (Currently Amended) The power control system of claim ~~19~~16, the feedback

control unit further comprising:

a ~~zener~~Zener diode ~~coupled to the first diode for cutting off the DC voltage being outputted through the first diode when it is higher than a breakdown voltage of the zener diode~~limiting the induced voltage received by the power supply control circuit.

22. (New) The power control system of claim 15, further comprising:

a main controller for generating a power control signal for controlling an on/off function of the power supply unit and for generating a brightness control signal for controlling brightness of the light source unit.

23. (New) The power control system of claim 22, further comprising:

a brightness controller for controlling the predetermined DC voltage output from the DC/DC converter according to the brightness control signal received from the main controller.

24. (New) The power control system of claim 1, wherein the patterned conductor is configured to transmit the conductor voltage, the transmitted voltage representing the abnormal condition if a power surge exists in the high voltage output, representing the abnormal condition if there is no detection of induced voltage from the high voltage output, and representing the

abnormal condition if the level of the induced voltage indicates that the high voltage is less than a predetermined voltage level.

25. (New) The power control system of claim 1, wherein the patterned conductor is electrically isolated from the high voltage output and has two ends, one end being connected to an input of the feedback control unit and the other end being grounded.

26. (New) A method for controlling power to a liquid crystal display (LCD) monitor having an LCD panel, the method comprising:

generating a high voltage;

applying the generated high voltage to a light source unit for providing light to the LCD panel;

detecting a voltage induced from the high voltage applied to the light source unit;

determining, based on a level of the induced voltage, an abnormal condition of the high voltage output; and

inhibiting said high-voltage generation during a time corresponding to the abnormal condition.

27. (New) The method of claim 26, wherein the detected voltage is induced into a patterned conductor for conducting the induced voltage to the feedback control unit and wherein the patterned conductor is configured to transmit the conducted voltage, the transmitted voltage representing the abnormal condition if a power surge exists in the high voltage output, representing the abnormal condition if there is no detection of induced voltage from the high voltage output, and representing the abnormal condition if the induced voltage indicates that the high voltage is less than a predetermined voltage level.